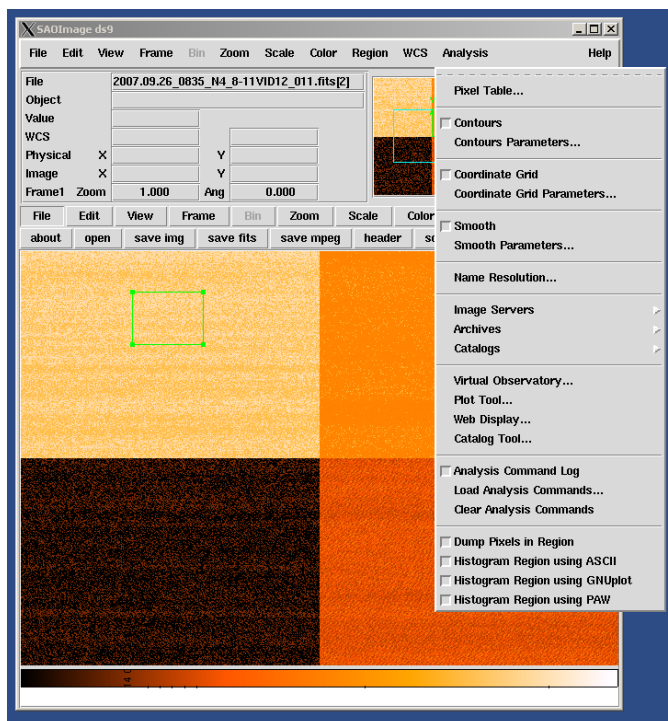DS9 Analysis Tools Modification (aka "pimp my ds9")
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DS9 is used to view and analyze FITS files. I have developed an add-on to DS9 that allows us to analyze the pixel values in a user-defined region of the image. First draw a region (box, circle, etc.) in DS9 then go to the Analysis menu. At the bottom of the menu there should be TWO choices:

- **Dump Pixels in Region** opens a window and simply prints all of the pixel values in the region. In this list there are three columns: X, Y, and pixel value. For some reason the (integer) pixel values are converted to floating point.
- **Histogram Region using PAW** makes a graphical histogram but uses the PAW tool to create a postscript file, which is viewed using gv. The PAW histogram includes mean and RMS values.

This document describes how to add this functionality to DS9.

I'm assuming that DS9 is already installed. We have version 5 on our DECam machines.

Install funtools. Funtools are a collection of utilities for working with FITS files. These tools are distributed at source code and must be compiled on your machine. The default location for the executables is `/usr/local/bin` which requires root access.

Copy the file **des.ds9** to your home directory ~.

Copy **paw** to /usr/local/bin (as root)

Create a utils directory in your home directory
$ mkdir ~/utils

Copy the **pixdump.sh** and **pawhisto.sh** scripts in ~/utils

Copy the PAW script **basic_histo.kumac** to ~/utils

Change the permissions on the shell scripts to allow the to execute.
$ chmod 755 pixdump.sh
$ chmod 755 pawhisto.sh

To display the PAW histograph GhostView must also be installed.